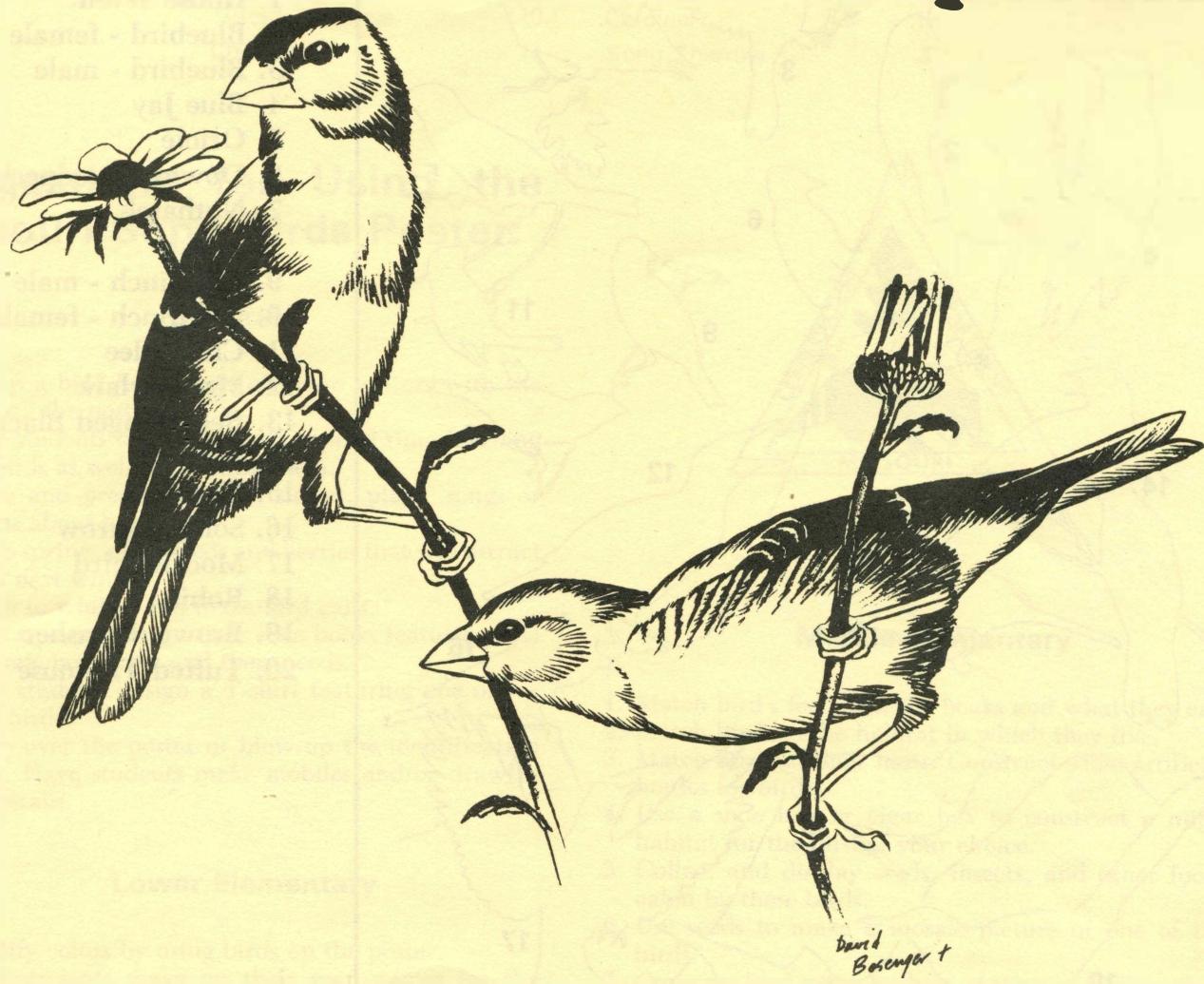


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Guidebook to Missouri Song Birds

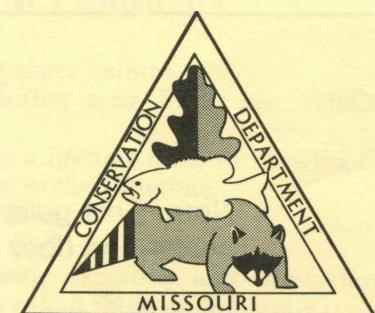
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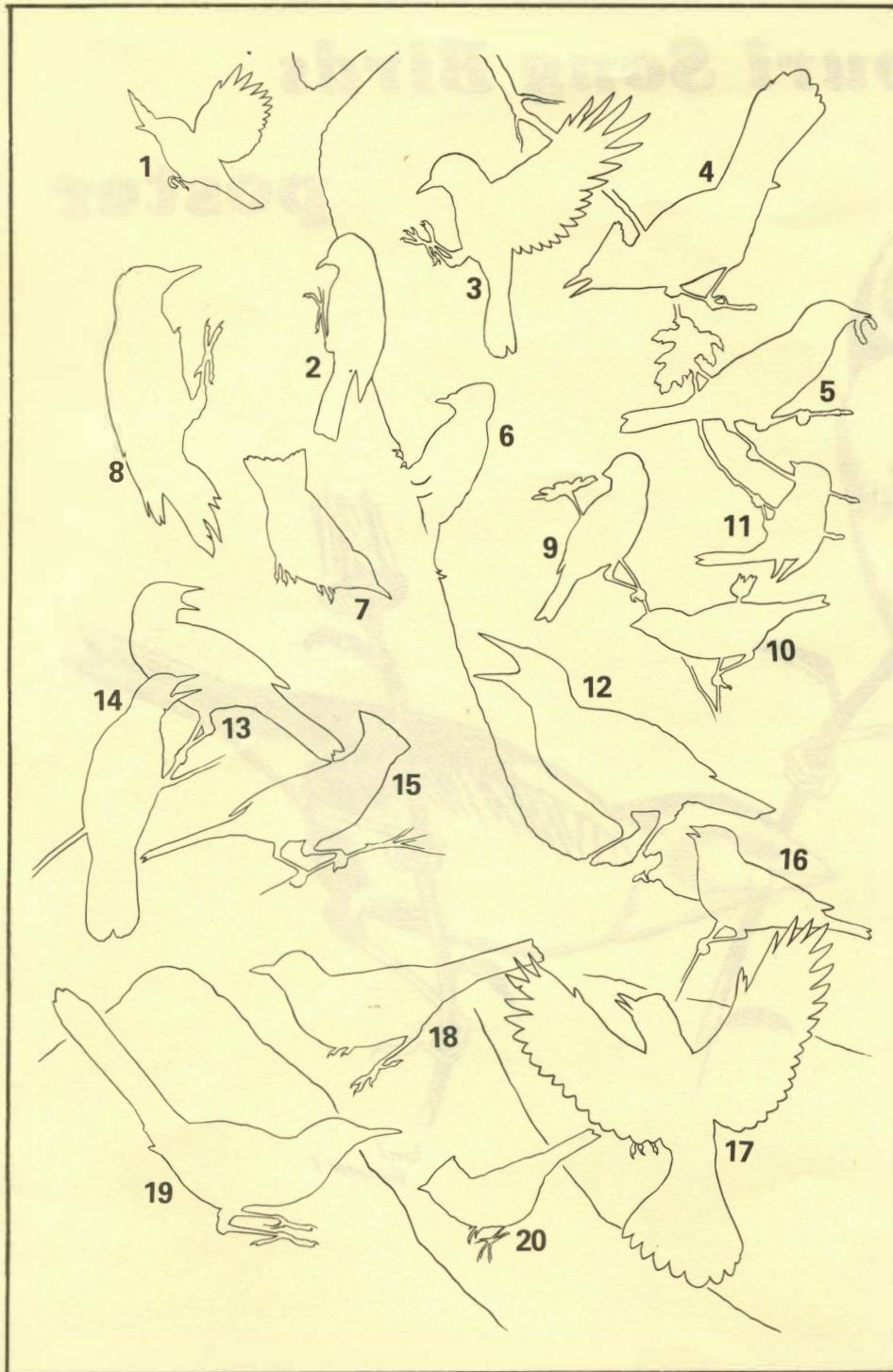
Art by David Besenger

Written by Jack Woodhead,
Conservation Education Consultant

Missouri Department of Conservation



Key to Missouri Song Birds poster



1. House Wren
2. Bluebird - female
3. Bluebird - male
4. Blue Jay
5. Oriole
6. Downy Woodpecker
7. Nuthatch
8. Flicker
9. Goldfinch - male
10. Goldfinch - female
11. Chickadee
12. Meadowlark
13. Red-Winged Blackbird
14. Catbird
15. Cardinal
16. Song Sparrow
17. Mockingbird
18. Robin
19. Brown Thrasher
20. Tufted Titmouse

Note: This guidebook is written to accompany the *Missouri Song Birds* poster and does not include all of the song birds found in Missouri.



Missouri Song Bird

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This project made possible by the 1/8 of one percent
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Suggestions for Using the Missouri Song Birds Poster:

General

1. Set up a bird feeder and compare visitors with the ones on the poster.
2. Take students on a bird walk. Spend time listening for birds as well as spotting them.
3. Write and present reports, stories, plays, songs or poems about birds.
4. In the spring, plant seeds and berries that will attract birds next winter.
5. Learn to whistle and make bird calls.
6. Have students design their own books featuring real or imaginary birds and their needs.
7. Have students design a T-shirt featuring one of the song birds.
8. Trace over the poster or blow-up the identification page. Have students make mobiles and/or draw in the details.

Lower Elementary

1. Identify colors by using birds on the poster.
2. Have students make up their own names for the birds.
3. Have students pretend they are birds. Include hatching, eating, flying, scratching for insects, etc. as activities.
4. Use the poster for counting and "likes and differences" exercises.
5. Which birds are flying? singing? eating?
6. Try making your own bird nests from paper, yarn, string, etc.
7. Make finger puppets or masks and have students make up a story or play.
8. Rank in size from largest to smallest.
9. Using an opaque projector, enlarge one of the birds. Play "pin-the-tail-on-the-bird."
10. Use pins to place real or pictures of insects and seeds next to the birds that eat them (see Oriole).



Middle Elementary

1. Match bird's feet with the beaks and what they eat.
2. Match birds to the habitat in which they live.
3. Match birds to their nests. Construct some artificial houses for birds.
4. Use a shoe box or cigar box to construct a mini-habitat for the bird of your choice.
5. Collect and display seeds, insects, and other foods eaten by these birds.
6. Use seeds to make a mosaic picture of one of the birds.
7. Compare bird wings to those of other animals such as bats and insects.
8. Use reference books to determine female coloration of the birds shown.

Upper Elementary

1. Draw a bird in its proper habitat.
2. Discuss laws protecting song birds (see Wildlife Code).
3. Have students begin a lifetime bird list showing the birds they have seen in their lifetime.
4. Try photographing birds.
5. Discuss anatomy of flight and feathers.
6. Make a booklet with narrative and illustrations depicting birds other than those on the poster.



EASTERN BLUEBIRD

Of the several bright-blue birds found in Missouri, only the Eastern Bluebird has a chestnut breast. The females and young males, whose colors are not so bright, are a little harder to identify.

This smaller relative of the Robin and thrushes is one of the most welcome summer residents among Missouri's birds. Not only its bright colors and cheerful song, but also its willingness to nest close to people's houses, makes it a favorite with almost everyone. In addition, it is a highly beneficial bird. About two-thirds of its diet is insects, many of which are damaging to crops. The rest of the diet is mostly weed seeds and wild berries.

Once common throughout all of the eastern United States, the bluebird has declined greatly in many heavily-populated states. This is partially due to pesticides used to kill insects. If the insects are then eaten by birds, the birds may die. Careful use of pesticides can usually avoid this problem.

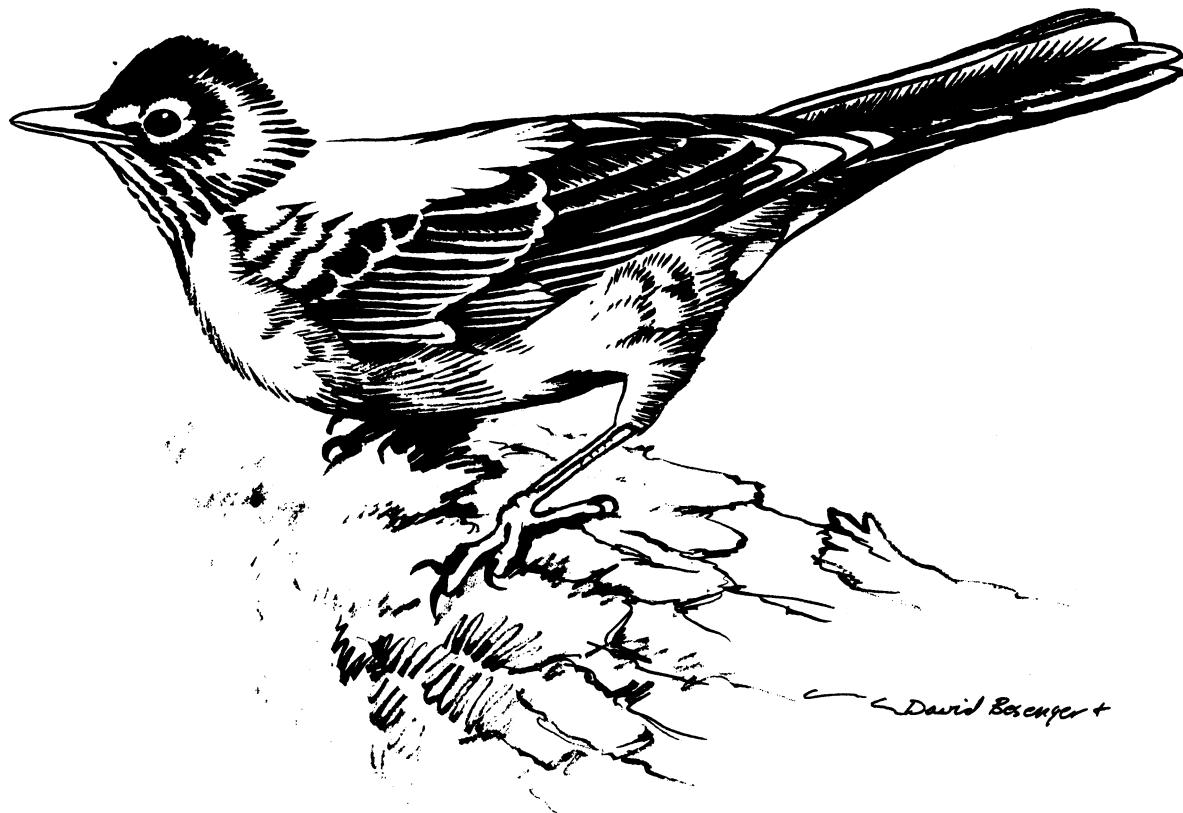
Another factor in the decline of the bluebird is competition for nesting sites. Bluebirds nest in tree cavities,

and, because they do not have heavy, chisel-like beaks, they must rely on woodpeckers to make most of the cavities. Fortunately, woodpeckers usually use a cavity only one year, leaving it to others the next year.

One of the major competitors for these nesting sites is a less desirable bird, the Starling. Starlings were brought in from Europe, and also nest in tree cavities. Since Starlings are slightly larger, more prolific, and more aggressive, they often occupy most of the suitable nest sites.

This shortage of nest sites is made more serious by the widespread clearing of forests. Even the removal of old, dead, and dying trees for firewood can reduce the available homes for bluebirds. Without nesting cavities, few young are hatched.

Missouri's bluebirds are still quite common in many areas, with migrating flocks of 20 or 30 not unusual. However, as our urban areas expand, great care must be taken, if we want to maintain the present population levels of this, our State Bird.



AMERICAN ROBIN

Red-breasted Thrush would be a more accurate name for our Robin. Most of its near relatives are called thrushes, and are characterized by spotted breasts. Juvenile Robins have spots, but lose them as they mature. Unfortunately, the American Robin reminded early settlers of the European Robin, and the name stuck. Now our Robin is well-known, and loved by that name, so I suppose it is too late to change it. But the Robin is really a thrush, as is the bluebird.

Many of the thrushes are famous for their songs, and the Robin's is a pleasant addition to a spring morning; however, it isn't as melodious as some, such as the Wood Thrush and the Hermit Thrush. In fact, the most famous songster in the world, the Nightingale of Europe, is a thrush.

Robins often nest near houses, sometimes building in the same site for several years. The nest is made of twigs and grass, reinforced with mud. The three or four eggs are, of course, robin's egg blue. After they hatch, the parents' work really begins, since each large nestling requires about 14 feet of earthworms per day, in addition to insects and caterpillars.

Although Robins do eat many earthworms when available, over half of their year-round diet is small fruits and berries. Sometimes they will take domestic cherries,

but usually they seem to prefer wild berries. If circumstances are right, such berries may ferment on the tree, and flocks of Robins are occasionally seen sitting, stumbling and falling on the ground after eating fermented berries. I wonder if Robins get hangovers?

The animal portion of the diet includes grasshoppers, caterpillars, beetles and other injurious insects, as well as earthworms. Whether they do more good than bad is not really known, but most observers don't care. Members of the Robin's fan club are extremely loyal.

Robins are often heralded as harbingers of spring, but this can be misleading. Many of them don't migrate at all. Some merely leave the suburbs, with their barren lawns, and winter in rural areas which offer a variety of winter foods. Others may go a short distance south, only to be replaced by those from farther north. It is not unusual to find large flocks of Robins in Missouri throughout the winter.

Until 1913, Robins were considered game birds, and in many cases, had no closed seasons or limits. Market gunners killed countless thousands yearly. Audubon reported them to be excellent eating. Today, they receive full protection under both State and Federal law, as do all songbirds.



NORTHERN FLICKER

This is one of the easiest woodpeckers to identify. Most of Missouri's woodpeckers are black and white—this one is brown. When it flies, the yellow wing feathers show clearly, as does the white patch at the base of the tail. It does, however, have the swooping, rise-and-fall flight which is typical of the woodpeckers.

The Northern Flicker spends more of its time on the ground than do most woodpeckers. It can often be seen in grassy fields, or even lawns, probing deeply for insects.

Flickers are noisy birds, uttering a wide variety of loud and raucous calls. Some can be almost frightening to someone unfamiliar with the woods. Flickers are also found in urban areas, and will sometimes visit feeders if suet is supplied. They usually get along well with other bird species.

In the western United States, there is another flicker whose major difference from ours is the presence of red,

rather than yellow, wing feathers. They were considered separate species, since the absence of trees in the Great Plains prevented their mixing. Then, farmers began planting wind-breaks across the prairies. The birds began to mix. Offspring were produced which had traits of both red-shafted and yellow-shafted parents. After a few years, scientists decided that the birds should be considered one species, with two races kept separate by the lack of trees.

Like most other woodpeckers, flickers dig nesting cavities in dead, not living, wood. They dig into live wood only to extract insects. Rather than damaging living trees, the woodpeckers serve as doctors of the forest, helping to keep the trees healthy. Without them, wood-boring insects can multiply explosively, causing great damage to our resources. Since most woodpeckers use each nest only once, the cavities which they make are later used by a variety of other birds and mammals.



DOWNY WOODPECKER

The Downy is our smallest woodpecker, slightly larger than a sparrow. They are so small that they are often seen clinging to corn-stalks, digging after corn borers. They will also glean insects and insect eggs from tiny twigs that are too small to support larger birds.

The Downy Woodpecker and the Hairy Woodpecker can be difficult to tell apart if they are not side-by-side. The Hairy is somewhat larger, but colored almost the same. The easiest recognition mark is the beak. The beak of the Hairy is nearly as long as the head while the Downy's is shorter than head length.

The diet of both these birds is about three-fourths insects, making them very beneficial to have around. The remainder of the diet is mostly seeds and berries, including poison ivy berries.

The Downy has a number of very specialized traits which are common to all woodpeckers. The toes are arranged with two forward and two back, rather than three forward and one back, as in most birds. This insures a strong grip on the side of the tree.

The tail of a woodpecker is stiff, ending in sharp points. This is used as a prop against the tree trunk, forming a steady work platform. The real work, however, is done by the head and beak.

The beak, heavy and chisel-like, makes an efficient wood-cutting tool. To prevent the pounding from damaging the brain, the front of the skull has a thick, spongy layer which acts as a shock absorber. The rest of the skull bones are thick and hard.

The front end of the tongue is usually hard and sharp, with a series of barbs to aid in pulling insects from their burrows. The rear of the tongue ends in a pair of long bony filaments just under the skin, which curl around the back of the skull, over the top, and end near the eyes. In some cases, this makes the tongue nearly twice the length of the head. An insect needs a very long burrow to escape a dart like that!

Downy Woodpeckers are fairly common in urban areas, if there are patches of woods nearby. They readily visit feeders where suet is supplied, and make an interesting addition to back-yard birds.



NORTHERN MOCKINGBIRD

The Northern Mockingbird has been called the "King of Song." Though rather drab in color, mockers more than make up for it in their ability to imitate a great variety of sounds. They have been known to mimic almost every bird in their area, plus barking dogs, squeaky wheels, whistles, musical instruments, frogs and crickets. Their imitations are so good that only electronic analysis can tell which is the original. In addition, they create long and complex songs of their own, which they sing at all hours, even in the middle of the night. During spring, the male often bounds a few feet into the air, then floats gently back to his perch, all without interrupting his song. Each call is usually repeated several times before changing to a different sequence.

In the spring, Mockingbirds are extremely territorial, ready to attack any creature that approaches their nest. They will drive off dogs, cats, snakes or people. They are especially vigorous when driving away other Mockingbirds and sometimes attack their own reflections. White wing patches probably serve as a warning signal to drive away other mockingbirds. As with other birds, territorial fights seldom cause any lasting injury, but do insure that the local food supply is protected for their offspring.

During the spring and early summer, the diet is mostly insects and spiders, but changes to berries and fruits as these become available. They have at times

caused damage to grapes, cherries and other fruits, but are seldom numerous enough to be serious pests.

Mockingbirds are members of the mimic-thrush family, as are the Catbirds and Brown Thrashers. The western United States has several other species of thrashers, all of them accomplished songsters.

Each feather of a Mockingbird, or any bird, is shaped to perform a particular job. The curved body feathers produce a smooth surface for air flow, as well as forming a tight surface to keep rain away from the skin. Downy underfeathers keep the bird warm. The long wing and tail feathers are some of the strongest structures in the world, for their weight. They provide a large air surface, as well as control for flight. Each feather can be moved individually to give such complete control of air flow, that some birds, such as hummingbirds, can even fly backward!

Mockingbirds are primarily southern birds, most common from California to Missouri to the Carolinas and south, but have been slowly expanding their range northward. A few are now found in Canada. The more northern mockers usually drift southward during the fall, but the southern populations are nonmigratory. They often perch on a chimney top, enjoying the warmth of the rising air from below, and filling the house with their song; not a bad trade, for those living in the house.



BROWN THRASHER

The Brown Thrasher is well-named; its long, loosely-jointed tail is continuously thrashing around as it sings; it scatters leaves in all directions as it thrashes among them, searching for insects; it thrashes to death any large insect which it finds; and it is likely to thrash any intruder which approaches its nest. Take your choice; no one really knows how it got its name.

Brown Thrashers like dense, thorny tangles close to the ground. They are especially fond of multi-flora rose fences. Often they come into the roads along such fences, and when a car approaches, they run briskly across the road before flying up into the shrubs. They seldom go high into the trees, and usually feed on the ground.

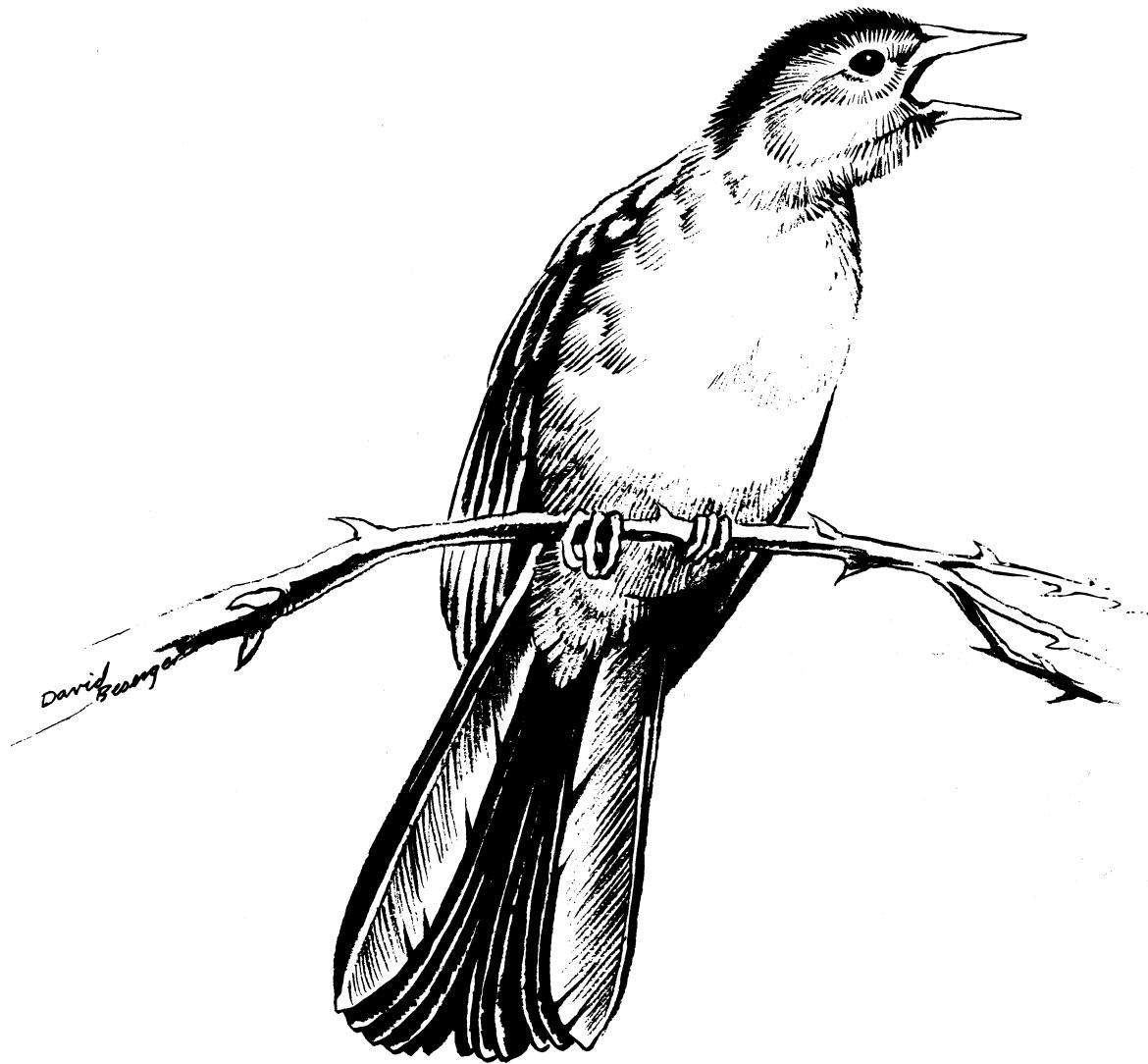
The nest is also placed on or near the ground. It is a bulky basket of twigs, stems, leaves and rootlets, often buried in a brush pile. The three to six eggs are white or light green, well sprinkled with brown spots. Incubation

takes 13 or 14 days. The nest is strongly defended, and the sharp bill is easily capable of blinding an intruder.

The thrasher's diet is about two-thirds insects, and one-third berries. They do less damage to fruit than do the related Catbird and Mockingbird.

Brown Thrashers are quite shy, and prefer to remain hidden. They fly awkwardly, and prefer to run or hop on the ground. Their song is almost as musical as the Mockingbird's, but includes fewer imitations. The Brown Thrasher usually sings each phrase twice, rather than the half dozen times of the Mockingbird.

Thrashers are sometimes confused with the thrushes, since both are brown on the back, with spotted breasts. The thrashers, however, are longer tailed, slimmer birds. The Curve-Billed Thrasher of the southwest, and several other western species, have strongly down-curved bills, while our eastern species has only a modest curve.



GRAY CATBIRD

If you hear a cat mewing, deep within a tangle of thorny shrubs, look closely. It may not be a cat at all. The catcall is only one of several harsh notes that the catbird mixes into its otherwise pleasant song.

Catbirds are members of the mimic-thrush family (Mimidae), as are the thrashers and Mockingbirds. All three rank among the best songsters, but the Catbird ranks behind the other two. In addition to inserting harsh notes, Catbirds do not repeat, singing each phrase only once. They are, however, excellent mimics, mixing the calls of other birds and assorted sounds into their own melodies. Their songs are loud and boisterous before the nesting season. Later the song becomes almost a quiet whisper.

Catbird colors are well suited to flitting about in dark, dense brush, where their over-all gray helps them hide. The only other colors are a patch of chestnut under the tail and a black cap. As with the other mimic-thrushes, the males and females are colored alike.

During spring, the diet is mostly insects, but many small fruits are taken during the summer and fall. Grape and cherry crops can be seriously damaged if there are too many Catbirds around. The insects they destroy probably inflict more damage than the Catbirds, which are usually present only in small numbers.

Catbird nests are placed low in dense thickets or tangles, and usually contain 3 to 5 eggs. Unlike most of their relatives, the blue-green eggs are clear, and not sprinkled with spots.



TUFTED TITMOUSE

This is a bird which is usually heard before it is seen. If it hasn't seen you, you may hear its loudly whistled "peter peter peter." If you are moving, lurking about like a predator, you are more likely to hear a harsh, chattering call—a scolding note which alerts all the birds in the area.

If you stay still, the Titmouse may approach quite closely. The crest will be raised, and one large, beady black eye will be focused on you. Suddenly, the bird reverses directions, and centers the other eye on you. As it continues to scold, other members of the loose flock may gather, until six or eight birds are scolding you from different directions. If this happens while you are squirrel hunting, you may as well move to another location, because all the squirrels within earshot will know that

there is something out there they don't like.

Titmice are primarily insect eaters, and often join their close relatives, the chickadees, in scouring the winter trees for insect eggs. Titmice are slightly larger and heavier than chickadees, and don't perform as many acrobatics, but are no less active. They seem to be constantly moving, and destroy thousands of woodland pests daily.

Titmouse nests are usually placed in old woodpecker holes, lined with moss, bark strips and hair. They have been known to pluck hair from living mammals, including humans!

Titmice appear to be all gray from a distance, but, if you watch carefully, you may see a patch of rusty feathers under the wing as they fly from limb to limb.



CHICKADEE

Some folks say they are friendly; others, more scientific and objective, merely say they are not wary of people. How ever you explain it, it is true that chickadees will approach an observer more readily than almost any other bird. With a little patience, you may have them literally eating from your hand.

One of our smaller bird species, chickadees are also one of the most acrobatic. They often hang upside down from a twig while they search the bark for insects or insect eggs. They can also cling to the side of a tree trunk, although they don't climb up and down as the woodpeckers and nuthatches do. These gymnastics enable them to pick off many forest pests which are passed-by when the warblers and other insect-eaters come through. Insects, insect eggs and spiders make up about two-thirds of the diet, with small seeds forming most of the remainder. Since chickadees are non-migratory, they are available to search out over-wintering insect adults and eggs which might be overlooked in the abundance of summer.

There are two species of chickadee in Missouri, the

Black-capped and the Carolina. The coloration is almost identical. The slightly smaller size of the Carolina and its four-note call, compared to the two-note call of the Black-capped, are the best recognition characters. The Black-capped is more common in the northern part of the State, being replaced by the Carolina in the south.

Chickadees usually nest in tree cavities, often in abandoned woodpecker holes. If the wood is rotted and soft enough, they may chip out their own cavity. They will also use artificial boxes similar to bluebird houses if placed in the woods. The nest is lined with moss, animal fur or feathers. The eggs usually number from four to eight, and hatch in about 12 days. Both adults help in feeding the young.

Chickadees on the nest will often remain sitting while persons observe them, but may attempt to frighten the intruders away. They draw in their breath, then release it explosively, with a sound like escaping steam. This usually causes the person (or predator) to jerk back, giving the chickadee an open escape route if it chooses to flee.



WHITE—BREASTED NUTHATCH

If you see a bird working its way down a tree trunk head first, it is almost certainly a nuthatch. Chickadees sometimes hang upside down from a twig while feeding, but they don't climb up and down as a nuthatch does. Nuthatches seem as comfortable upside-down as right-side-up.

The calls of the nuthatch are as distinctive as its habits. As it works over the trees, it utters, at intervals of several seconds, a single, nasal-sounding "yank." Sometimes a series of these notes are run together, to produce a sinister-sounding "laughter."

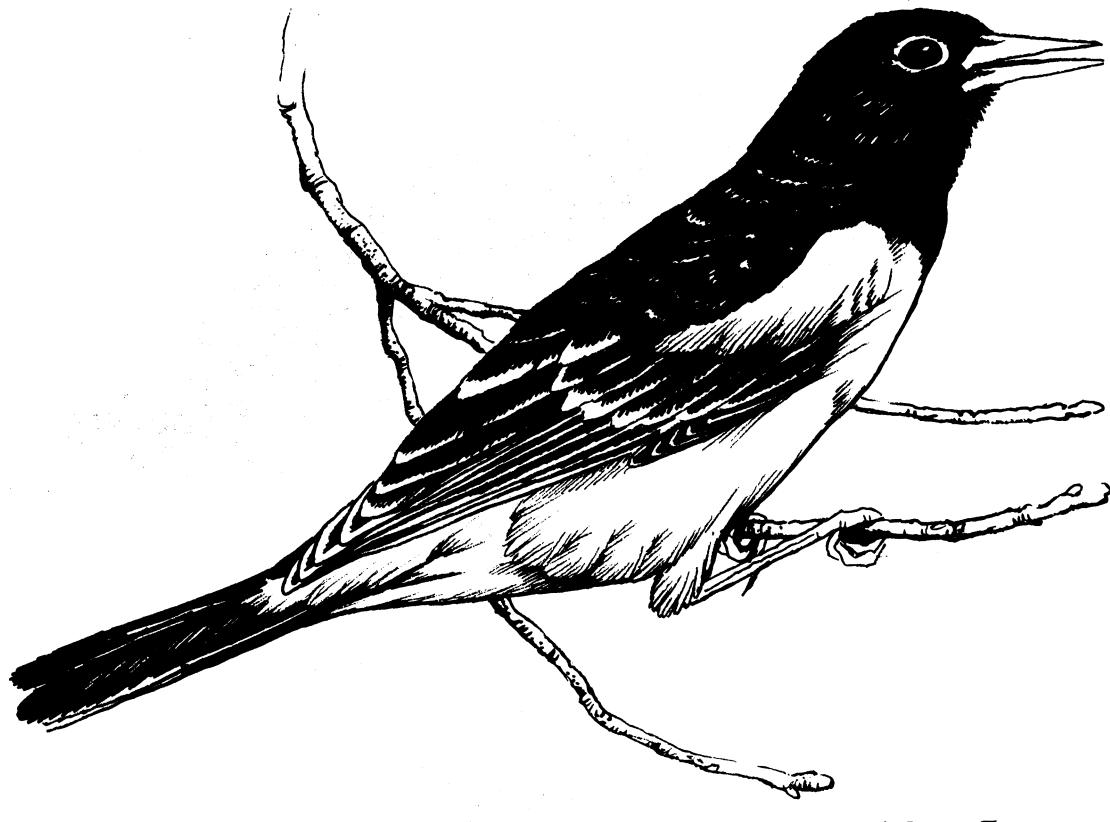
About half the diet is insect eggs, many of which are forest pests. The other half of the diet is acorns and other seeds. The name "nuthatch" comes from the habit of forcing acorns into crevices of the bark, and then prying the shell off. The nuthatch's beak is not heavy enough to allow them to break strong nut shells or dig into living wood for insects. They can, however, dig into dead wood

to form nesting cavities. They will also use old woodpecker holes or natural cavities.

Because White-breasted Nuthatches are present in Missouri woods all year, they can remove a great many insect eggs during the winter, preventing much of the damage the insects would do; and nuthatches take their work seriously. They are in almost constant motion, searching every crack and crevice of the bark.

Nuthatches are friendly and curious birds. If you sit without moving, they will sometimes approach to within a few inches, and gaze questioningly into your face. Don't blink, and it may hop up on your toe, looking for insect eggs. Nuthatches are also frequent visitors to bird feeders.

The White-breasted Nuthatch is the common form in Missouri. A slightly smaller and less common species, the Red-breasted Nuthatch, is also found here in winter. Their habits are much the same, except that the Red-breasted shows a distinct preference for conifers.



David Besenger

NORTHERN ORIOLE

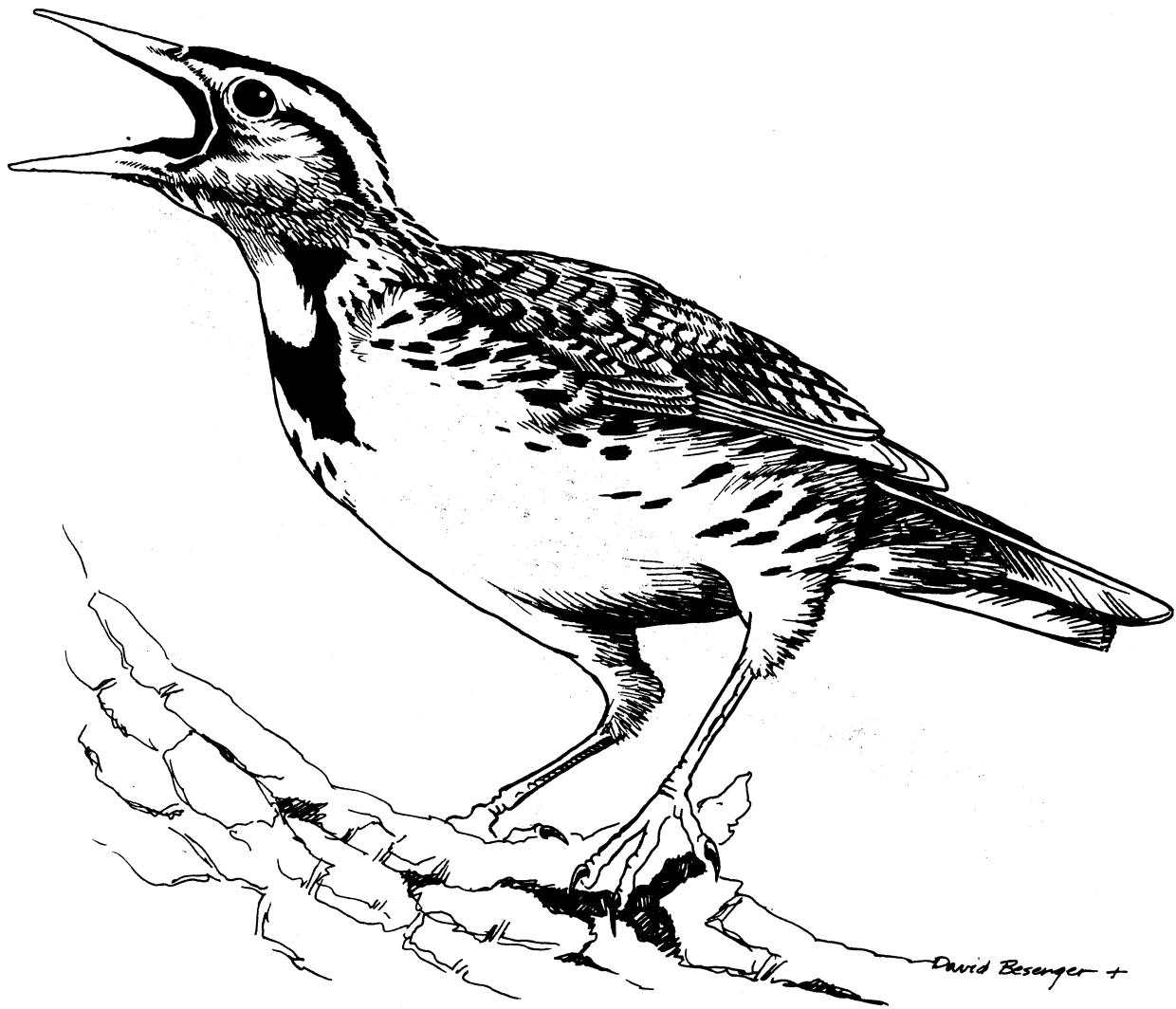
The bright orange flash of a Northern Oriole flitting about in the upper branches of a tree is a thrilling sight. Few birds are more brilliantly colored. The clear, piping call is also very pleasant. But, in most discussions about orioles, it is not the color, or the song, which receives the most attention. Usually, the birds' nest captures the limelight.

The nest is a skillfully woven bag about the size of a person's fist, and is suspended from the tips of slender, swaying branches. The female selects long strands of grasses and plant fibers, and anything else handy, to weave into her nest. In the past, horsehair was often used. Now, she often finds string, yarn or even strips of cloth or paper to be suitable building materials. She uses her beak to poke the strands back and forth through the nest until a strong pouch is produced. Some strands may be stitched through more than 30 times. Few predators, except crows and screech owls, can reach the nest as it dangles in the breeze.

Orioles spend a great part of their time hopping about high in the tree tops, searching for caterpillars and other insects. Only a small part of their food is berries and fruits. Their activities help to control the hoards of insects which pose a constant threat to our trees.

Few people realize that the brilliantly colored Northern Oriole is actually a close relative of the drab blackbirds, but the long, slim beak is only one of several similarities. The eastern race, which is found throughout Missouri, has long been called the Baltimore Oriole, in honor of Lord Baltimore of England, whose traditional family colors were orange and black.

Oriole songs are difficult to describe, since there is considerable individuality even within a small area. They usually consist of a cheery half dozen or so clear, simple notes, with occasional dry rattles inserted between calls. Unlike many birds, the females often join in, although in a more modest way.



MEADOWLARK

When you see a meadowlark, you can be sure there is an open, grassy field nearby. This is a prairie bird, nesting, feeding and roosting on the ground. Six of the prairie states have named it as their state bird. The streaked, brownish back blends beautifully with dead grass; and it walks, rather than runs or hops as do most woodland birds.

There are two species of meadowlarks and both are found in Missouri. Their color and markings are so similar it is difficult to tell them apart even at close range. However, when they sing, it becomes easy. The Eastern gives two clear, slurred whistles, pleasing but not spectacular. The Western produces a melody of 7-10 notes, rising, falling, gurgling; one of the most musical of bird songs.

The general color pattern, streaked brown back, yellow underside and black breast mark, must have special survival value in prairies. Two other unrelated

grassland birds are similarly marked. The Horned Lark and Dickcissel are smaller, slimmer birds than the chunky, quail-sized meadowlark, so there is no problem of confused identities.

The meadowlark's nest is a slight depression in the ground, lined with grass, over which the female constructs a dome by lacing together the surrounding grass blades. She often builds a tunnel entrance. A successful male may have two or three mates in a territory which covers several acres. Each female usually nests twice during the summer.

Meadowlark diets consist mostly of grasshoppers, cutworms and other plant-eating insects during the summer, and weed seeds during the winter. They are usually considered very beneficial to the farmer. Many migrate only short distances and may be found huddled under a snow-topped clump of grass on cold winter days.



RED-WINGED BLACKBIRD

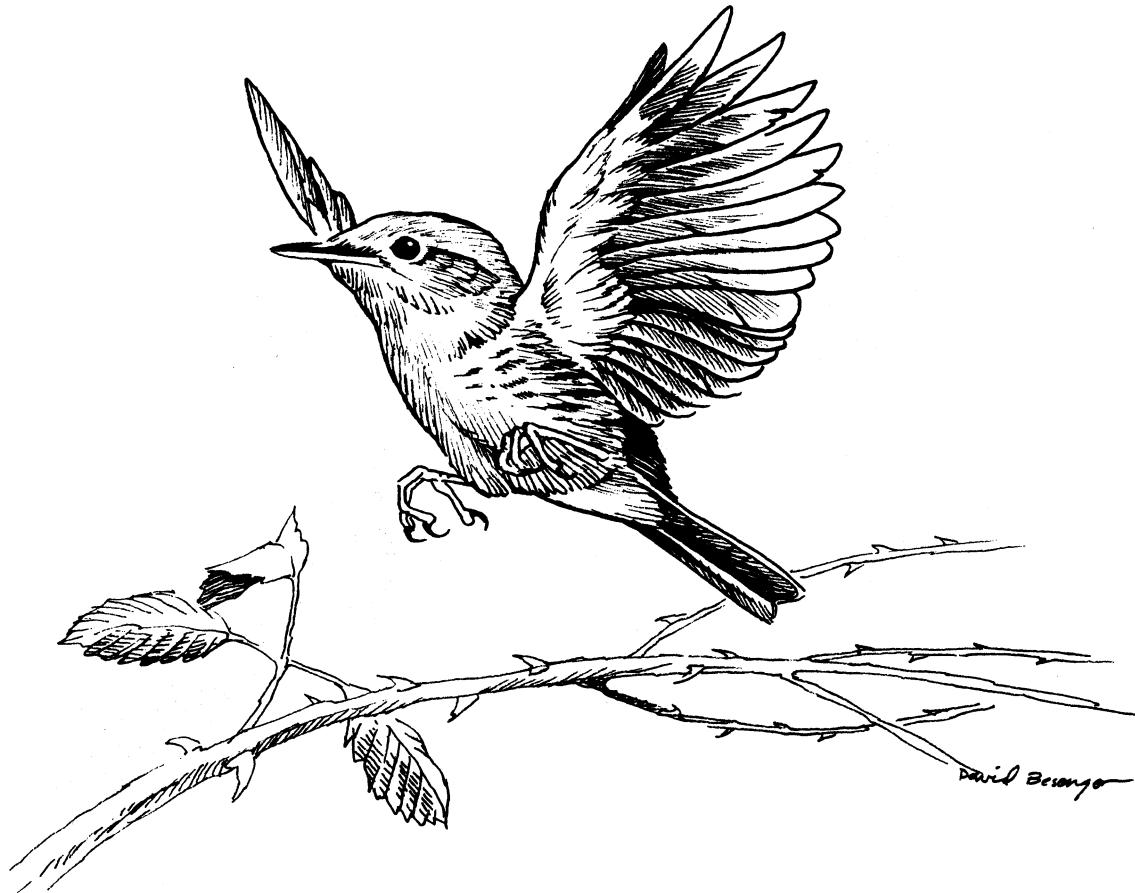
Suppose you are walking along a stream or lake, or wading in a marsh. Suddenly, you are surrounded by angry-sounding birds. They scold from the cattails, and fly over your head, threatening to dive to the attack. The chances are, you have come too close to a group of Red-Winged Blackbird nests. It may be one family, with one male and several females, or it may be a colony of several thousand. The nests are usually lashed to the upright stems of cattails or other tall water plants, suspended over the water. The dull-brown females usually remain hiding among the stems. The males do most of the guarding, but don't usually attack something as large as a human.

Redwings gather in enormous flocks for migration and wintering, sometimes numbering several million birds. Often, other species of blackbirds, grackles and starlings join the flock. If these flocks descend on a

farmer's grain fields, just before harvest, they can do serious damage. When they roost in an area, their droppings can become a health hazard. For these reasons, they are sometimes considered a nuisance. A large part of their diet, however, is weed seeds and insects, so they are of considerable benefit in smaller numbers.

Since Redwing nests often hang over the water, fledglings which fall from the nest risk more than just a dunking. Large-mouth bass frequently hide in the shade of the plants, and are quick to pounce on careless birds. Large bullfrogs have also been known to take such babies. Of course, with a large bass around, the frog who leaps for a bird may himself become a meal.

The song of the Redwing is perhaps the most common and easily recognized birdsong around lakes and marshes. The gargled "o-ka-lee," ending on a high note, can be heard throughout the spring and summer, since each female may raise two or three broods.



HOUSE WREN

House Wrens are tiny birds, but you would never know it from their actions. They are quick to defend their nest, scolding and attacking any intruder, regardless of size. Even humans risk a painful jab to the scalp if they get too close. The wren's voice is also more than expected; its Chippewa Indian name means "a big noise for its size."

The House Wren's song is a forceful, bubbling torrent of notes, merry and pleasing, delivered with great rapidity. It may be repeated four times a minute. When disturbed, both males and females produce harsh scolding notes which leave little doubt as to the result of continued advances.

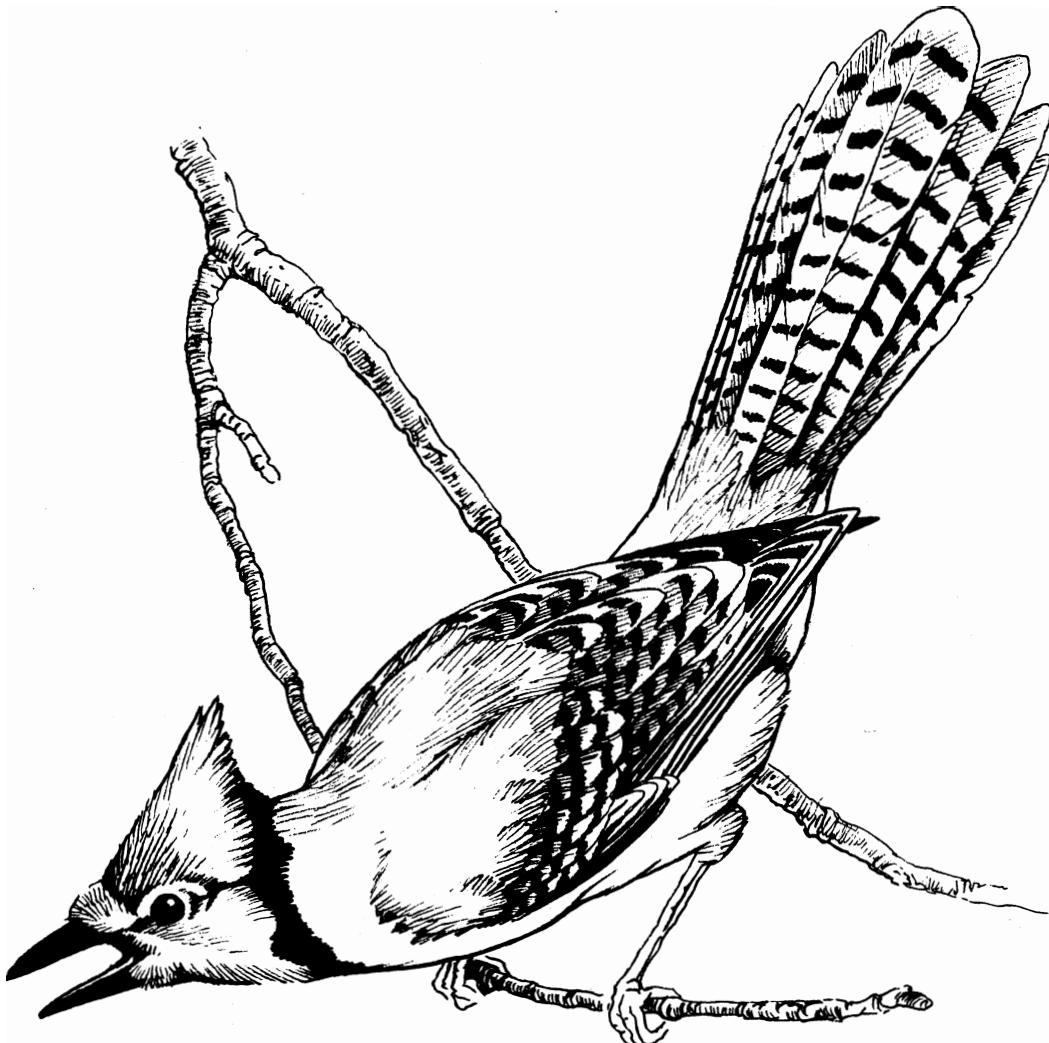
Few birds nest near human homes as readily as House Wrens. Their Latin name, *Troglodytes*, means "cave-dweller," and cavities in rocks and trees are the preferred nest sites; but almost any other cavity may be acceptable. Wren nests have been found in tin cans, hornet nests, farm machinery, a bleached cow skull, discarded straw hats and leather gloves, mail boxes, even the back pocket of a pair of trousers hung out to dry. The author's children are forced to give up their swing-set each summer, because a wren builds her nest in one of the supporting metal legs.

House Wrens are one of the easiest birds to entice into using a home-made bird house. The design of the house is not important, but an opening no more than 1 1/4

inches high will keep out English Sparrows. House Wrens often leave twigs sticking out the entrance, probably to prevent larger birds from entering. Wrens have also been known to peck and destroy the eggs of other species who nest too close to their nest. This helps to decrease competition for food. Reduced competition is important since each pair may raise two or three broods during the summer.

Wren diets consist almost entirely of insects, spiders and the like. The six to eight young require enormous amounts of food. One male House Wren was observed making over 1,200 foraging trips in one day, an average of one trip every 47 seconds. Many of these insects are damaging to crops or forest trees, so wrens are considered welcome inhabitants of our woods. Since some species are not migratory and others migrate to Missouri for the winter, they continue their task of destroying insects throughout the year.

Many insects are taken in areas seldom visited by other birds. The Winter Wren, for example, is usually found among the exposed roots of stream-side trees, or deep within brush and log piles. On the other hand, both species of marsh wrens spend their time creeping about among the stems of long grass and rushes in wet areas. Without the wrens, many of the insects in these areas might go unchecked.



David Besenger

BLUE JAY

If I were a wild animal—a deer, a squirrel, or perhaps a wild turkey—I would like to have a few Blue Jays around. They make excellent watch dogs. Few predators, human or otherwise, can move through the woods without exciting the jays, and an excited jay is a noisy jay. A noisy jay doesn't always indicate a lurking predator, but it is worth checking out.

If, however, I were a small bird, Blue Jays would not be welcome. They often steal eggs or young from other bird's nests. This, however, is not a large part of the jay's diet, and is balanced against the insects which make up about one-fifth of the diet.

About three-fourths of the Blue Jay's diet is vegetable matter, with acorns and other seeds making up most of it. Like its relative the crow, it sometimes raids gardens for planted seed corn, or other grain, but this is a minor part of the diet. If you live in a rural area, and leave extra food out for your dog, the jays will probably get a large part of it.

Blue Jays are also frequent visitors to bird-feeding

stations, and will often chase other birds away.

Although many persons can recognize the Blue Jay's "Thief! Thief!" alarm cry, few are familiar with its more melodious calls. Jays perform a wide variety of calls, some of them being almost musical and bell-like. They even mimic other birds at times.

Blue Jay nests are not carefully constructed affairs. They are crude masses of sticks, bound in cedars or densely branching hardwoods. They often weave string, ribbons or paper into the nest. The male and female look alike, and share the parental duties. If you approach the nest, you may be attacked by the birds swooping down to peck your head.

There are several types of jays in different parts of the country. Many are rather handsomely marked. Most show about the same degree of trouble-making habits. Several will become quite tame around camp, and even take food from your hands. They may also take your shoe laces, your watch, your loose change and any other small articles left lying around.



AMERICAN GOLDFINCH

Some call it the "wild canary", both for its bright yellow color, and its cheerful song. Goldfinches sing even while flying, keeping time with the rise and fall of their swooping flight. A flock feeding in a grove keeps up a constant chatter, which probably helps the flock stay together.

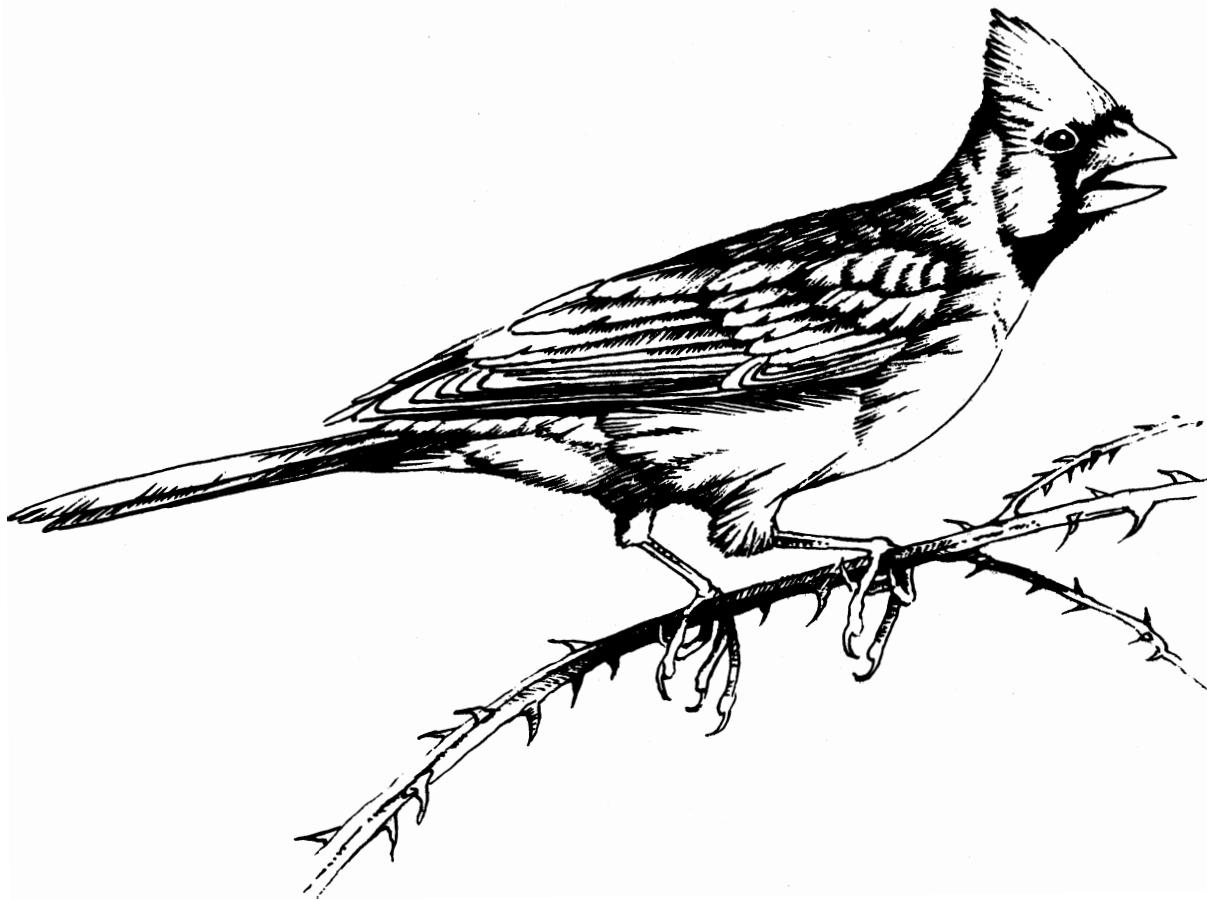
The Goldfinch diet is composed almost entirely of seeds, with only a few destructive insects added. Favorite seeds include thistle, dandelion, chickory, aster, mullein, goldenrod, sunflower, elm, birch and sycamore. Many of these are taken near human dwellings, and a dandelion-filled yard may attract hundreds of Goldfinches—a beautiful and thrilling sight!

Goldfinches don't build their nests in the early spring as do most birds. In fact, they are the latest birds to nest.

They wait until July and August, when the thistles are blooming. The nest is usually built within a couple of meters of the ground, and the favorite lining material is thistledown. The adults swallow seeds, allow them to soften in the crop, and then regurgitate them for the young.

Females and young males are dull olive-yellow, and the males lose their bright colors in the fall. They can still be identified, however, by their incessant singing and the black wings with narrow white bars.

Goldfinches are found throughout the United States, and migrate slowly. Some spend the winter in snowy northern areas, and will come to feeders all winter long. Thistle and sunflower seeds are especially attractive at this time.



CARDINAL

This is perhaps our most widely recognized bird—except *maybe* the Bald Eagle. It is easily identified, it frequents heavily populated areas, and it has a loud but pleasing call. Also its recognition quotient has certainly not been hurt by its association with big league sports.

Cardinals have also inspired volumes of prose, poetry and song, extolling their virtues and charm. Most of it is probably true. Both male and females sing, which is unusual among birds. The male fiercely defends his territory. He will attack other males, his reflection in a window, a piece of red paper; anything which looks like a competitor. He feeds the female while she broods the eggs, then feeds the young while she begins a second nest.

The diet of Cardinals includes large numbers of injurious insects, as well as many weed seeds. This makes them valuable to the farmer and the home gardner. It also makes them frequent visitors to bird feeders, where

they eat a variety of seeds. Their favorite, however, seems to be sunflower seeds.

Although often called simply “redbirds”, this can cause confusion, since the Summer Tanager is also referred to by this name. The tanager lacks the black face and the pointed crest of the Cardinal.

Cardinals do not migrate as do many other birds, but may join together in small flocks. They may wander over considerable areas, gathering wherever there is a good food source.

Perhaps the group which least appreciates Cardinals is the squirrel or turkey hunters. Cardinals utter loud alarm notes whenever they notice a predator in their midst, and other animals quickly become more wary. That is exactly what the hunter does not want. The frustration seldom lasts long; few hunters fail to admire the brilliant flashes as the bird flits through scattered patches of sunlight.



SONG SPARROW

Everyone knows what a sparrow is—except that nearly everyone is mistaken when they point one out. Usually the bird indicated is an English Sparrow, which isn't really a sparrow at all, but an imported weaver-finch. So what is a sparrow?

Sparrows are mostly small, brownish, streaked birds, so they look much like the English Sparrow. Actually, there are over 50 species of sparrows which nest in the U.S. and Canada, with about 20 found in Missouri. Most avoid people and houses, preferring open fields and woods. They are also difficult to identify without a close examination.

Song Sparrows are one of the easiest sparrows to identify, due to a large dark spot in the center of the chest. Beyond that, it becomes rather complicated, since there are over 30 races of Song Sparrows recognized in North America. It is best to refer to a good field guide for definite identification.

Several species of sparrows are known for their songs, but the Song Sparrow is the best of the lot. There are many variations, and one bird may sing several melodies. Many observers have tried to describe the song, but no written word can capture the feeling one gets while listening to the bird announce his presence from the highest branch of a small tree.

Song Sparrows prefer brushy fields, stream borders and gardens rather than deep forests. They often nest in clumps of grass or small shrubs, and usually produce two broods per season. They often serve as hosts to Cowbirds, which lay their eggs in other bird's nests. The Song Sparrow then raises the Cowbird chick, which may push the sparrow nestlings out of the nest.

Song Sparrows eat mostly weed seeds picked from the ground. A small number of insects are added to the diet during the summer. The same is true for the native sparrows. The English Sparrow may be a pest, but the native species are a benefit to the farmer.

NOTES

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